DOCUMENT RESUME

ED 177 467 CS 004 954

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TITLE Overextensions in Production and Comprehension: A Methodological Clarification.
PUB DATE [77]
NOTE 15p.; Research prepared at The University of Illinois at Chicago Circle

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Abstraction Levels; Cognitive Processes; *Comprehension; *Comprehension Development; *Language Development; *Language Processing; Language Proficiency; *Language Research; *Linguistic Competence; Preschool Children; Preschool Education

ABSTRACT

Sixteen children (aged 14 to 26 months), who were reported by their parents to overextend, were tested for overextension in both language production and comprehension. The children were first asked to name each of a series of pictures of inappropriate exemplars of the words they were reported to overextend. Those words that were overextended, a total of 27, were then tested in comprehension. For each word, the child was shown four pictures--an appropriate, an inappropriate, and two irrelevant exemplars--and asked to point to the referent. The results were clear cut: not once in the 27 comprehension trials did a child make an error. The findings suggest that overextensions do not result from partial knowledge of the meaning of a word, but rather that they are due to a child's stretching of his or her vocabulary to its limits in an attempt to communicate. In addition, they indicate that children's knowledge of language is much more precise than would be suggested by their utterances. (FL)

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Overextensions in Production and Comprehension: A Methodological Clarification

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At about two years of age, children pass through a stage of language development in which they use words inappropriately to name objects. The most frequently observed aspect of this misuse is the overextension of a term, for example using dog to name not only dogs, but also cats, cows, and the like.

The popular explanation of overextensions is that children have an underspecified meaning for the word being used (Clark, 1973). In this view, overextensions are a perfectly appropriate use of a word within the child's linguistic system; the child's competence ascribes a more general meaning to the term than does the adult's.

If overextensions are a matter of competence, then they should appear in comprehension as well as production. Yet, Huttenlocher (1974) has informally observed that children who overextend production do not seem to do so in comprehension. This would suggest an alternative account of overextensions: they are due to some performance limitation peculiar to the child's speech system. In a more systematic study, Thomson & Chapman ( ) also found that some words that are overextended in production are correctly comprehended, supporting the performance hypothesis. But they also discovered words that are overextended in both comprehension and production as predicted by the competence account.

This confusing state of affairs has led Thomson and Chapman to propose a "revised differentiation model" and a "revised feature model." Clark and Clark (1977) and Clark (1977) have also responded to these results by revising Clark's (1973) original model into a two-step process that attributes some overextensions to immature competence and others to performance factors. In this note, we will argue that none of these

revisions of the standard account will work. We have found that, contrary to the results of Thomson and Chapman, children never overextend in comprehension when tested properly. This suggests to us that all overextensions arise from constraints on linguistic performance.

Thomson and Chapman investigated whether five children, aged 21 to 27 months, who overextended in production, also did so in comprehension. They found that for 12 of the 20 words studied there was no overextension in comprehension. Yet for the other 8 words the children overextended in both comprehension and production. The inconsistency in their findings, however, may well be due to their methodology. Although only five children were studied, they were tested repeatedly. This very rigorous testing procedure, itself, may have distorted the results of their study.

In addition to an initial parental interview and play session with each child there were five to seven testing sessions for production and comprehension. Each session lasted until the child got tired, from 30 to 60 minutes. The sessions were carried out two or three a week over a two to three week period. Four words which were overextended by a child in production were each tested 16 times for comprehension.

On 10 comprehension trials a picture of an appropriate exemplar of the word being tested (e.g. a dog) was paired with an overextended exemplar (e.g. a cow). The children showed a statistically significant preference for the appropriate picture for 12 of the 20 words tested, as mentioned above. On 5 trials an overextended exemplar was paired with an unrelated exemplar and the children preferred the overextended exemplar for 16 of the 20 words. On 1 trial, two unrelated exemplars

were paired and the children refused to choose on 18 of the 20 words. The various conditions were intermixed randomly. Note that each child had to respond to a total of 64 picture pairs!

It is well known that if children are repeatedly queried on the same item, they may switch from a correct answer to an incorrect alternative in an attempt to please the adult. In the normal course of events, of course, an adult does not repeat a question if the child's answer is correct, only if it is incorrect. Thus, a child's answers to identical questions may be inconsistent, due not to linguistic ignorance, but to a social strategy.

That this may have been an actual problem in the Thomson & Chapman study is indicated by the results of a pilot study for the experiment reported below. Seven children, aged 21 to 27 months, were tested with repeated queries on comprehension of a total of nine words which they had overextended in production. (Two of the children were each tested on two words.) For each word, a child was shown a random array of four pictures: two appropriate exemplars and two overextended exemplars. For each array, the child was asked four times to indicate the target word. After each response, the picture indicated by the child was removed from the array.

On the first trial, the appropriate exemplar was chosen for all nine words ($p < .002$, binomial probability). On the second trial (now showing one appropriate and two inappropriate exemplars), one child refused to respond any further, three chose an inappropriate exemplar, and five again chose an appropriate exemplar. On trials three and four, one of the five continued to respond to the remaining inappropriate

exemplars. The other four refused to choose an inappropriate exemplar. The three who had chosen an inappropriate exemplar on trial two, continued to alternate, appropriate on trial three and inappropriate on trial four--when, of course, that was the only exemplar left. This performance deterioration, after all children had chosen correctly on the first trial, seems rather striking evidence for the confounding effects of repeated testing.

In the present study, conceived and conducted independently of Thomson & Chapman's, the problem of repeated testing was eliminated by testing each word that was overextended in production only once for comprehension. The child was shown an array of four pictures, randomly ordered--one appropriate exemplar, one inappropriate exemplar and two irrelevant exemplars. The irrelevant exemplars were used to detect random responding. If a child has a choice of only appropriate or inappropriate exemplars, either choice is of theoretical significance although it may only have been picked at random. In addition, the probability of choosing the appropriate response by chance was reduced from 50% with only two alternatives to 25% with four alternatives.

It was also considered important to discover, if possible, whether the children would comprehend the correct name for the inappropriate exemplar (which they had overextended to in production) even though they had never produced this word - at least not during the testing procedure. Thus, a second trial was devised in which another random array was presented with the same four pictures used in the first trial, but this time the child was asked to indicate the location of the inappropriate exemplar. For example, if the child had previously called a cat dog, he would be asked, Where is the cat?

Method

Subjects

Sixteen middle and uppermiddle class white children, between 14 and 26 months old, served as subjects. (An additional three were dropped because of refusal to respond.) Parents who called in response to a newspaper article and who indicated that their children overextended in production, were given an explanation of the study and asked to keep a record of their child's overextensions for two weeks. They were then called back to obtain their report and to set an appointment for the actual testing. The picture cards for each child were prepared according to the information the parent gave during the second phone call.

Materials

Pictures of exemplars consisted of black line drawings on white paper, similar to pictures in children's coloring books.[1]

Procedure

Each child was visited once, in his home. The sessions took about 45 minutes, with an initial play period and with brief play periods between each separate test trial for both production and comprehension. After friendly rapport was established, the testing procedure began.

Production

Each child was shown a series of pictures which the mother had indicated the child overextended to. In presentation of the series of pictures, the target exemplar was always last. This was done to ensure that the child was productively overextending the use of the word to pictures of other objects and was not just perseverating in using the

target word for all succeeding pictures. For example, if the target word was dog, the pictures might be of a cat, horse, cow, and dog, in that order. The child was shown each picture and asked to name it. If the child did call at least one other item besides the appropriate picture by the target word, that item was used as the inappropriate exemplar in the comprehension trial. If a mother indicated that a child overextended more than one word, the child was tested on all of the possible words. On the production tests, seven children overextended one word, seven overextended two words and two overextended three words. Thus, a total of 27 words were overextended in production by the 16 children.

Comprehension

To test for comprehension, the child was shown four pictures, randomly spread out on the floor: an appropriate exemplar, an inappropriate exemplar, and two irrelevant exemplars (e.g. dog, cat, car, and vase, respectively). If a child was tested on more than one target word, the irrelevant exemplar on one word was never an exemplar of another word to be tested.

While the child looked at the array, he was asked, Where is the (target word)? Show me the (target word), until a response was made. The first picture or object the child pointed to or picked up was accepted as the answer.

After the comprehension trial and a brief play period, the pictures were again randomly spread out. This time, the child was asked to indicate the inappropriate exemplar. For example, if a cat had been called dog in production, the child was asked for the cat. Thus, the

child was asked to indicate an appropriate exemplar for a word which the child had not produced, at least not during the testing session. The child had, in fact, incorrectly called the exemplar by another word in the production trial.

During the testing trials, the Experimenter sat on the floor, at the child's side and slightly behind him, to decrease the possibility of inadvertent cueing of the correct answer.

Results

The 16 children were tested for comprehension of a total of 27 words which they had overextended in production. The overextended words, their inappropriate exemplars and the number of children for each are shown in Table 1.

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Insert Table 1 about here

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The results of the experiment were clear cut. On all comprehension trials for the words overextended in production, each child indicated the appropriate exemplar. In other words, not once in all 27 trials did a child overextend in comprehension.

When the children were asked to indicate the inappropriate exemplar, there were seven responses and 20 refusals to respond. Of the seven that responded, all were correct, a success rate which is statistically significant ($p < .00006$, binomial probability).

Discussion

The present study indicates that children's knowledge of language is much more precise than would be suggested by their utterances.

Although a child may call a cat dog, the child can discriminate without error an appropriate referent of that word from an inappropriate one. Thus, the reason for overextension in production would not seem to be a lack of specific semantic features as Clark (1973) has suggested. Nor would it seem necessary to invent either a revised feature model or a revised differentiation model to account for the mixed findings of Thomson & Chapman in comprehension. Rather, our results support the view that children always know the correct referents of the words they overextend.

It should be noted that there is one possible artifact in this experiment. Recall that the picture of the target word was always shown to the child last for naming in the production trials. It might be argued that the reason every child picked that same picture in the following test of comprehension is that it was that the picture they remembered best. However, it seems to us highly unlikely that seeing the target word last in the production task would have such an effect, for two reasons. One, there was a brief play period between production and comprehension tasks, so that memory for the last picture presented would not necessarily be good. Second, and more importantly, in the pilot study for this experiment, the pictures in the production task were presented in random order, yet the children still chose the picture of the target word in 9 out of 9 comprehension trials. Hence, we believe there is no force to this objection.

In the comprehension trials for the inappropriate exemplar, a reasonable interpretation for the pattern of results would be that children refuse to respond if they don't know the word and will respond

correctly if they do know the word. Since there were 20 refusals to respond and all seven responses were correct, the results are so categorical as to suggest a child's decision to respond is based on his knowledge. Thomson & Chapman ( ) also report children refusing to respond (for 18 out of 20 words) when shown two irrelevant exemplars, indicating that children of this age prefer to withhold an answer rather than be wrong.[2] Thompson and Chapman also found, as we did, that some children knew the names of overextended exemplars.

Although the present study says nothing directly about what performance limitations lead a child to overextend in production, there are some obvious possibilities. For the child who knows the word for the inappropriate exemplar, as seven of our children apparently did, the reason for the overextension in production may be difficulty in retrieving the correct word. This possibility has been suggested previously by Major (1906, cited in Clark & Clark, 1977), Bloom (1973), and Huttenlocher (1974).

Even for adults, it is much easier to recognize a word in listening to speech or reading than to retrieve the same word for speaking or writing purposes, as shown by the fact that receptive vocabularies are larger than productive vocabularies. Children may face similar problems in retrieving words from their lexicon.

In those cases in which the child does not know the word for the inappropriate exemplar, the explanation for overextension may simply be a lack of vocabulary with the concomitant performance strategy of substituting a word which the child feels is similar enough in meaning to what he wants

to express. This also occurs with adults. For example, one of the authors wanted to say in conversation: This behavior demonstrates what we're talking about. However, the word demonstrates could not be retrieved at the moment of production, so after a hasty and futile search of the lexicon, the speaker substituted the word exhibits in the sentence with the subsequent disclaimer that the word didn't express exactly the meaning intended. Although this was a retrieval problem, it had to be solved in the same way as if the correct word were unknown, much as children who overextend in production may be doing. Bloom (1973) has also suggested that such overextensions might be due to a limited vocabulary.

Thus, we speculate that there are two causes for overextensions: a limited vocabulary when the child does not have the correct word for the inappropriate exemplar and retrieval difficulty when the child does know the name for the overextended exemplar.

To summarize our argument, there is no indication in our data that overextensions ever result from partial knowledge of the meaning of a word. Rather, they seem to be due to the child's stretching his available vocabulary to its limit in an attempt to communicate.

Footnotes

1. In addition, five actual objects were used when the overextended word was ball or apple: a red apple, an orange, a yellow ball, a blue rattle, and a small plastic doll. Since no differences in the results were found with this manipulation of materials, it will be ignored below.
2. Apparently, though, overextending a term is not considered incorrect usage by the child.

References

Clark, E. (1973) What's in a word? On the child's acquisition of semantics in his first language. In T. E. Moore (ed.), Cognitive Development and the Acquisition of Language. New York: Academic Press.

Clark, E. (1977). First language acquisition. In John Morton and John C. Marshall (eds.), Psycholinguistics: Developmental and Pathological. Ithaca: Cornell University Press.

Clark, H. & Clark, E. (1977). Psychology and Language. New York: Harcourt Brace Jovanovich, Inc.

Thomson, J. & Chapman, R. Who is "Daddy" revisited: the status of two-year-olds' overextended words in use and comprehension. Journal of Child Language.

Table 1

Overextensions Observed on Production Trial

Overextended Word	Overextended to	Number of Cases	Age* in Months
car	bus	4	14,21,*21*,*22*
	truck	3	19,*21*,*24*
truck	bus	1	20
dog	cat	4	*17*,*18*,22,26
	lion	1	*21*
	horse	1	*24*
kitty	lion	1	*19*
bird	duck	1	*17*
duck	bird	3	*19*,20,23
	chicken	1	23
apple	ball	1	*21*
ball	apple	5	*17*,*17*,19,*21*,*21*
	orange	1	20

Total = 27

*Females are in italics